

## **DISPLAY UNIT WITH PASS THROUGH SHELVES**

### **1. Field of the Invention**

The invention relates generally to paperboard display apparatus. More particularly, the invention relates to paperboard displays for holding modular blocks containing products.

### **2. Background**

Paperboard display stands for exhibiting merchandise are well known. They can be used to display merchandise for viewing and/or sale. Hanging display trays are commonly employed which include a paperboard display tray and plastic or metal hooks. These paperboard trays generally include a flat paperboard portion which may be used for printing and which include a hole for hanging the paperboard tray on the hook. Paperboard trays may include an integrated box, a blister pack or may be attached to the merchandise itself. The plastic or metal hooks are used to hang the tray in a metal, usually permanent, store fixture. Thus, the use of such hanging trays is limited to stores which have appropriate metal fixtures.

Due to the expense and limited mobility of metal store fixtures, attempts have been made to provide movable display bases which are less expensive. For example, paperboard A-frame displays have been developed which may provide support for modular blocks or hanging display trays. A-frame displays often incorporate bases with wheels that allow the display to be easily moved to different areas of the store. However, conventional A-frame displays do not provide sufficient rigidity and may easily be tipped. The problem of tipping may be exacerbated by the addition of the

metal or plastic hooks needed for use with hanging display trays. Such A-frame displays may also be cumbersome or difficult to assemble. A display apparatus which is easily assembled, sturdy and capable of use with hanging display trays is therefore needed.

5           Other display apparatus have attempted to solve the problem of displaying and/or selling items in hanging display trays by placing them in modular blocks. The modular blocks work in conjunction with paperboard displays of various types. However, modular blocks often obscure the packaging and/or products of the hanging display tray. Thus, what is needed is an inexpensive, movable display apparatus  
10       which allows the packaging and/or products of a hanging display tray to be visible to consumers.

### **SUMMARY**

The display unit according to certain embodiments of the invention may preferably be used for displaying products in modules. The display unit is preferably  
15       made from a single blank allowing assembly of the display unit without the use of glue, tape or any other such fasteners. The shelves of the display unit may preferably be formed by cut sections in the rear wall of the display unit. Once the display unit is assembled, the shelves may be configured by folding the two side walls of each shelf and pulling the shelf through the opening in the front wall of the display unit. The  
20       trays may also be configured without side walls if desired. Thus, the shelves are formed integrally with the display unit rather than being separate pieces that must be attached to the display unit. Shelf modules containing product may be placed on each

shelf as desired. Preferably, the shelf modules create a friction fit between the side walls of the shelf, further holding the shelf modules in place.

Certain embodiments of the invention provide a display unit for displaying products in shelf modules formed from a single blank without the use of glue, tape or other fasteners, the shelves of which are preferably configured by folding the two side walls of each shelf and pulling the shelf through an opening in the front wall of the display unit.

### **BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS**

Fig. 1 is a perspective view of an erected display unit according to certain embodiments of the invention with product therein.

Fig. 2 is a perspective view of 2 erected display units according to certain embodiments of the invention located on an A-frame display and including shelf modules containing products.

Fig. 3 is a back view of an erected display unit according to certain embodiments of the invention.

Fig. 4 is a top plan view of a carton blank that may be used to construct the display unit of Fig. 1.

Fig. 5 is a top plan view of a carton blank that may be used to construct one of the display unit shown in Fig. 2.

### **DETAILED DESCRIPTION**

As shown in Figure 1, according to certain embodiments, the display unit of the invention comprises a front panel 12, two side panels 16,18 and a back panel

20. The front panel 12 is preferably generally rectangular and comprises a top edge, two side edges and a bottom edge. It should be understood that the front panel can be a parallelogram, triangle or any other shape as desired. Each of the two side panels 16,18 are connected to one of the side edges of the front panel 12. The back panel 20 is preferably of the same general size and shape as the front panel and has a top edge, two side edges, and a bottom edge. The two side edges of the back panel 20 are connected to the side panels 16,18, opposite the front panel 12.

The display unit 10 may include a top panel 22 and a bottom panel (not shown), connecting the front panel and back panel, to provide additional support. The front panel 12 includes at least one aperture 28. According to certain embodiments and as shown in Fig. 1, two apertures 28 are located on the front panel 12. The back panel 20 includes two shelf panels 40 corresponding to the two apertures on the front panel. Each shelf panel 40 is connected to the back panel 20 by a fold line 42 located at approximately the level of the bottom of the aperture 28. The shelf panels 40 can be folded down and passed through the corresponding aperture 28 of the front panel 12 so that the shelf panel is substantially perpendicular to the back panel 20, forming a shelf 30. According to certain embodiments of the invention, the fold line 42 may be located slightly lower than the bottom edge of the corresponding aperture on the front panel. This will cause the shelf to be angled slightly upward when the shelf panel 40 is passed through the aperture, forming a slightly rearwardly tilted shelf 30, if desired.

The shelf 30 may be substantially flat without any sides (not shown) or it may include small side walls 32,34, as are shown in Figure 1. The side walls are created

by folding side portions of the shelf panel 40 up along fold lines 33. When a module 50 containing product is placed on a shelf 30 according to certain embodiments of the invention, the side walls 32,34 may create a friction fit that facilitates holding the module in place. It should be understood that the shelf 30 may also comprise a front wall (not shown) foldably connected to the shelf if desired.

The shelves 30 may optionally include a retention tab 38 along the back panel. The retention tab is formed by cut and fold lines in the shelf panel 40. The retention tab 38 extends upwardly and prevents a module from sliding through the back panel and off the display unit when the module 50 is located on the shelf 30. The retention tab 38 is shown as a semicircular portion cut from the back panel, however, it should be understood that the retention tab may be any shape and size that will assist in retaining the modules.

Certain embodiments of the invention are shown in Fig. 2. According to certain embodiments, the location of the apertures 28 and the shelves 30 can be varied depending on the size of the display unit, the size of the apertures, the size of the shelves and the number of shelves desired. The shelf panels 40 may be of the same width as the aperture 28. Alternatively, the shelf panels may be wider than the apertures if desired. In such case, it is preferable that the shelf comprise side walls 32,34. The fold lines 33 connecting the shelf panel and the side walls may preferably be aligned with the sides of the apertures 28 which allows the shelf to more easily pass through the aperture. A base, such as an A-frame 60 display shown in Fig. 2, can be used to support multiple display units. It should be understood that any type of

base or stand can be used to support the display unit according to certain embodiments of the invention.

Certain embodiments of the present invention may be constructed from a single blank 70, preferably made from corrugated, paperboard, fiberboard or other  
5 suitable material. Fig. 5 shows a blank that may be used to construct the display unit of Fig. 2. The blank comprises a front panel 12. Side panels 16,18 are foldably connected to each side edge of the front panel along fold lines 25. A first back panel 72 is foldably connected to the side panel 16, and a second back panel 74 is foldably connected to the side panel 18. A tab panel 42 is preferably foldably connected to the  
10 first back panel 72 along a fold line 25 located on the opposite side of the first back panel from the side panel 16. A tab panel 42 is also preferably foldably connected to the second back panel 74 along a fold line 25 located on the opposite side of the second back panel from the side panel 18.

The front panel 12 comprises a plurality of apertures 28. As shown in Fig. 5,  
15 the apertures may be generally rectangular, but it should be understood that the apertures can be cut according to other shapes if desired. Each shelf panel is created from cut and fold lines in the back panel. For example, to create one shelf, the back panel includes two substantially vertical cut lines and a substantially horizontal cut line connecting the two substantially vertical cut lines at their uppermost portions. At  
20 the bottommost portion of the two substantially vertical cut lines, there is a fold line 42 connecting them. By folding along the fold line 42 and passing the shelf panel 40 through the corresponding aperture 28, a shelf 30, such as shown in Fig. 1, is formed.

A top panel 22 may preferably be foldably connected to the top edge of the front panel 12 along a fold line 25. A top tab panel 76 may be foldably connected to the top panel 22 along a fold line 25. A bottom panel 24 may preferably be foldably connected to the bottom edge of the front panel 12. A bottom tab panel 78 may be  
5 foldably connected to the bottom panel 24 along a fold line 25.

The display unit 12 of the invention can be shipped in an unassembled, substantially flat state. Assembly of the display unit is simple and requires no additional fasteners or adhesives. A preferred, but not exclusive, method for assembling an embodiment of the display unit 10 shown in Fig. 2 is described. The  
10 side panel 16 is folded along the fold line 25 so that the side panel is substantially perpendicular with the first back panel 72. The side panel 18 is folded along the fold line 25 so that it is substantially perpendicular to the second back panel 74 and parallel to the opposite side panel 16. The front panel 12 is folded along the fold line 25 so that front panel is substantially perpendicular to the side panels 16,18 and  
15 parallel to back panel 20. The two tab panels 42 are folded and tucked between the first back panel 72 and the second back panel 74, securing the display unit. The combined first back panel 72 and second back panel 74 form the back panel 20. It should be understood that the blank according to certain embodiments of the invention may comprise a single back panel 20 rather than first and second back  
20 panels as shown in Fig. 4. The top panel 22 is folded along the fold line 25 and the top tab panel 76 is folded along the fold line 25 and inserted inside the back panel 20. The bottom panel 24 is folded along the fold line 25 and the bottom tab panel 78 is folded along the fold line 25 and inserted inside the back panel 20.

The foregoing description is provided for describing various embodiments and structures relating to the invention. Various modifications, additions and deletions may be made to these embodiments and/or structures without departing from the scope and spirit of the invention.